Goodell (W.)

ON

THE MEANS EMPLOYED

AT THE

PRESTON RETREAT

FOR THE

PREVENTION AND TREATMENT

OF

PUERPERAL DISEASES.

BY

WILLIAM GOODELL, M.D.,

Physician-in-Charge of the Preston Retreat, Clinical Professor of Diseases of Women and Children in the Hospital of the University of Pennsylvania, etc.

Extracted from the American Supplement to the "Obstetrical Journal of Great Britain and Ireland" for July and August, 1874.

PHILADELPHIA:
COLLINS, PRINTER.
1874.

PREVENTION AND TREATMENT

OF

PUERPERAL DISEASES.

It was not my purpose to publish the statistics of the Preston Retreat until one thousand cases of delivery had been reached. But, in view of the fatal epidemic of puerperal fever now prevailing in Philadelphia and in the city of New York, I have so far yielded to the wishes of my friend, the editor of this journal, as to give a short account of the precautions taken in this institution to guard against the occurrence of puerperal diseases. This I am the more emboldened to do, because the peculiar measures adopted have apparently made the statistics of this institution compare very favorably, not only with those of like charities, but also with those of private practice. They have also kept its wards free from any epidemic of puerperal fever; although, during the past three years there has been more or less of this disease in this city, and, within the past two months, a number of deaths from this cause have occurred in the immediate neighborhood of the building.

The Preston Retreat is a small lying-in hospital for reputable married women. The yearly average has thus far been about one hundred labors, but it is now rapidly increasing. It contains four wards, each with a capacity of 9153 cubic feet, and each furnished with five beds, of which not more than four are generally occupied at one time. The ventilation in winter is obtained by the escape of the cold and foul air through an old-fashioned fireplace, in which a jet of gas is kept constantly burning, and by the free admission of pure air, which has been heated in the basement by passing around steam-chests, with large radiating surfaces. In summer, the admission of pure air depends exclusively

upon open doors and windows, and the ventilation is, consequently, less perfect than in winter. In the spring and autumn months, there are many days in which the temperature is too warm for the free admission of heated air, and yet too cold for open windows. These are, therefore, the two seasons of the year which I dread the most, and in which I avoid, as much as possible, crowding the wards.

The wards are used invariably in rotation. By close management, and by crowding walking patients together, one of these wards in its turn stands idle for two or three weeks. During this time the doors and windows are kept open. Before it is again occupied by patients, the walls, floor, wood-work, and furniture—all of which are painted—are thoroughly scrubbed with carbolic acid soap, and then mopped over with a solution of half a pint of carbolic acid (Calvert's No. 4), to one pail of water. From this time until the ward is again vacated, no portion of it, not even the floor—unless accidentally soiled—is touched with water.

The nurses wear such clothing only as can be washed. As soon as the inmates of a ward are well enough to take care of themselves or of one another, their nurse is relieved from duty. She now takes a soap bath, puts on an entirely clean suit of clothes, and goes into a ward which has been thoroughly ventilated and cleansed. Before a new batch of patients falls to her care, she has had one week or more of rest. I visit the wards thrice daily, beginning always with the ward last occupied, and with the patient last delivered. Whenever a vaginal examination is needed, it is put off until all the other patients have been seen. The examining finger is then anointed with an ointment containing carbolic acid, and the hands are afterwards washed with carbolic acid soap. Post-mortem examinations I never perform. Whenever one is needed, an expert is called in, and remunerated for his services.

The beds consist of a tick filled with fresh straw and covered with an army blanket. After the discharge of a patient, her bed is emptied, and the tick, blanket, and bedclothes are boiled in water to which a little carbolic acid has been added. Each bed is furnished with a feather bolster and pillow, which are exposed on slats to the air when not in use. Once a year every bolster and pillow-tick in the house is washed, and the feathers baked

and "renovated," as it is technically termed. They also pass through the same process whenever soiled, or whenever used by a patient whose convalescence has been delayed.

The patients come chiefly from the poorest classes; but many in more comfortable circumstances, with the hope of getting better care, seek admission on account of some difficulty attending their former labors. On this account, the proportion of difficult labors is much above the average. Those patients who have families often put off coming in until labor has actually begun, and then leave at the earliest possible moment. Notwithstanding this, since patients have the privilege of remaining four weeks after their delivery, the average stay of each one is sixteen days before delivery, and eighteen days after. Every patient, upon admission, takes a warm bath, and at least one a week thereafter before her delivery. If she exhibits signs of feeble health, she is at once put upon the use of quinia, and of the house mixture, consisting of two parts of the muriated tincture of iron, with three of dilute phosphoric acid. The habitual constipation of pregnancy is met by the administration, either in the morning of a teaspoonful of pulv. glycyrrhizæ comp. of the Prussian pharmacopeia; or, at bedtime, of four Lady Webster's pills (pil. stomachicæ). When a more active purge is needed, the pulv. jalapæ comp., or the pil. cathartic. comp. (U. S. P.) is given. Headache and sleeplessness are treated by warm baths, by full doses of potassic bromide, and by the above-named medicines, when indicated; albuminuria is dealt with in pretty much the same way, but always with iron and phosphoric acid. The regular diet is plain and wholesome, yet more liberal than is usual in charitable institutions. Apart from the frequent use of aperients, a relaxed condition of the bowels is promoted by serving table syrups at every meal, by fruits—fresh or dried, according to the season—and by all such vegetables as can be eaten raw, viz., lettuce, cress, radishes, leeks, onions, tomatoes, cucumbers, and cabbages. Of these, in this latitude, an ample supply is obtainable during nine months of the year.

When a patient falls into labor, she first has her bowels moved by an injection, and then takes a warm bath. The bag of waters is usually ruptured artificially, and the liquor amnii collected in a grocer's scoop. The second stage of labor is never allowed to

linger; any delay is met by the use, either of the vectis or of the forceps. As soon as possible after the birth and the removal of the child, the placenta is delivered by Crede's method. I may here remark that the still pulsating cord is first cut, then "stripped" of its blood, and as much as possible of its gelatin, and finally tied, when it has ceased to bleed, and has become flaccid. Neither belly-band nor any kind of dressing is afterwards applied, but the cord freely dangles about from the navel. Treated in this manner, it dries up without any bad smell, and falls off like a ripe fruit, without leaving a raw stump. Out of more than five hundred infants treated thus, not one has had a pouting or sore navel requiring treatment, and not one has had an umbilical hernia. I am also well satisfied that, by dispensing with the belly-band, I have had fewer cases of inguinal hernia. Those of my readers who wish a more detailed account of this method of dealing with the cord, can consult the *American Journal of Obstetrics*, vol. iii. p. 327.

Ergot is hardly ever resorted to as an oxytocic; but one teaspoonful of the fluid extract is invariably given as soon as the head presses upon the perineum. When the labor is over, the perineum is examined, and, if torn, is at once sewed up with silver sutures. The patient is now washed clean, and a binder and cylindrical compress applied, the latter in the hollow just beyond the fundus of the womb. The bedstead on which she has been delivered is next wheeled from the Delivery Room to a ward and placed along the side of a bed, to which the woman now hitches herself over. Contrary to the generally held opinion that absolute rest after labor is indispensable, in no single instance has this muscular exertion apparently brought about a flooding. It seems rather to condense still further the uterine globe. Very rarely, indeed, has a flooding happened outside of the Delivery Room. However warm the weather, a blanket is thrown over the patient, and a foot warmer put to her feet. These remain until reaction sets in, and she asks to have them removed. A mug of beef-tea made from Liebig's extract is now given, and the child put to the breast as soon as it will take it. Thereafter, in a natural convalescence, the woman gets tea, boiled eggs, bread and butter, for breakfast; potatoes, and some kind of meat for dinner; stewed or fresh fruits, tea, bread and butter,

for supper. On the morning following the day of her labor, the binder is removed for good, and she slips into a chair while her bed is making. This is repeated once or twice a day until the fourth or fifth day, when she, if so disposed, gets up and dresses herself. No patient quits her bed against her will; yet the force of example is so great, that very few care to stay in bed, when they see their companions up and about.

No woman is allowed to suffer from after-pains. Whenever these are complained of, one-quarter grain doses of morphia are administered every hour until relief is obtained. In stubborn cases of after-pains I have found nothing act so promptly as the exhibition of ten grains of quinia every six hours, until the ears ring. For this valuable suggestion I am indebted to my friend Dr. Fordyce Barker. Bed-pans are not employed, except in cases of illness, or in cases requiring vaginal injections; but each woman has her own chamber-pot which she uses indifferently, either in the sitting or the knee-elbow posture. Every woman is required to wash her own person at least once a day, and that with carbolic acid soap and a wad of fine oakum, which is at once thrown away. Only under very exceptional circumstances does the nurse cleanse the patient. Should the lochia become offensive, the woman is made to get out of bed and slip into a chair three or four times a day. This usually corrects the fetor; but if it does not, then and only then is a solution of potassic permanganate thrown up into the vagina. Firmly believing the nozzle of a syringe to be the medium of virus communication from patient to patient, I avoid the use of vaginal injections as much as possible. For a like reason, the temperature thermometer is not habitually used, but only in single cases as an aid to diagnosis.

Whenever the lochia are offensive, or the pulse is over 90, or the thermometer indicates a temperature higher than natural, or pelvic pains are complained of, or, in short, whenever any untoward symptom appears, quinia is given in from six to ten-grain doses every four hours, until the ears ring. In addition, for abdominal pains large doses of morphia are given, and the whole belly is painted with iodine, and covered with a mush poultice. The canonical purge on the third day is dispensed with. A patient has usually a movement of the bowels either before, or on the day in which she gets up for good. If this does not hap-

pen, she takes four Lady Webster's pills at bedtime, which then act on the morning of the sixth day. As soon after getting up as she feels strong enough, she takes a warm bath.

Thus far I have stated the means adopted at the Preston Retreat for the prevention and the treatment of puerperal diseases. I now purpose to give my reasons for such of them as need some explanation.

But few words are needed to explain why the ordinary chamber-pots are used, and why patients are made, once or twice a day after the first, to get out of bed and slip into a chair. The presence of putrescent fluids in the utero-vaginal tract is recognized by all writers as the great cause of the autogenetic variety of puerperal disorders. But the recumbent posture of itself necessarily tends to detain these poisonous discharges in contact with the traumatic lesions of labor. These discharges may also be partly imprisoned in the vagina through the swollen condition of the more external soft parts, or partly corked up in the uterine cavity by the presence in the cervical canal of a putrid clot. In such cases detergent vaginal injections are highly recommended. But clinically they will be found of limited value; for they cannot reach high enough, and do not ordinarily dislodge a large clot even when situated low down. True, intra-uterine injections are not open to one of these objections; but, apart from their being attended at best with some degree of hazard to the patient, the operation is too delicate a one to be entrusted to a nurse. Besides, in hospital practice the nozzle of a syringe—to say nothing of the fingers of a nurse—is, I fear, so often one of the vehicles for the transmission of virus, as to make this means of disinfection of doubtful propriety. In a local outbreak of fever, especially of the diphtheritic form, I should, however, suggest the use, immediately after labor, of vaginal injections containing the nitrate of silver or the persulphate of iron, in quantities large enough to sear over the traumatic lesions of labor. Such injections I have had no occasion to try, but they ought to inhibit active absorption and promote healthy granulation.

While seeking a substitute for the syringe, my attention was directed to the fact that the act of sitting on the ordinary chamber-pot often forced out putrid shreds or fetid clots, which had not been washed away by vaginal injections. This led me to

discard, except in cases of positive illness, the use of bed-pans or of any other utensil—such as urinals—which can be used by a woman when lying on her back. Shortly after making this change, I found that, for like reasons, some shrewd and very practical writers of the last and the present century, urged an early departure from the recumbent posture. Further; a residence of some years in the East had taught me that oriental women, at least, can with impunity get up and be about a few hours after delivery. Influenced by these facts, I decided, cautiously at first, to introduce into the wards of the Retreat a system of puerperal gymnastics, consisting in no restraint whatever as regards the position in bed, and in the daily release from an irksome confinement. I was much pleased to find that the muscular exertion needed for these movements, so far from inducing hemorrhage, excited the womb to contraction, and emptied it and the vagina of their putrid contents. I can testify that whenever the lochia are offensive, these upright positions, repeated several times a day, are excellent deodorants, better in fact than any detergent vaginal injections. There is yet another advantage gained by this plan: it affords, in hospital practice, an excellent opportunity for bundling the bed and bedding out of the ward, and giving them a much needed airing. In a crowded hospital ward the hygienic importance of such repeated disinfection can hardly be overestimated. At the risk of being called an enthusiast, I will go a step further, and hazard the assertion that there is a form of puerperal septicemia not necessarily accompanied by putrid lochia—at least not appreciably so—but indicated by high temperature, rapid pulse, complete anorexia, heavy sweats, and, later, by herpes labialis, which stubbornly resists treatment until the patient is made to get out of bed. This I have seen often enough, after keeping a woman on her back for some pelvic disturbance, to prevent any mistake as to the relation of cause and effect.

Lying-in women are encouraged to get up for good when they feel so disposed, because there are, to my mind, strong objections to the rigorous maintenance of the recumbent posture. Labor is, in general, a strictly physiological process, and there can be no sound reason why it should be made to wear the livery of disease. Nature teaches this very plainly, for most women wish to get up

long before their physicians are willing to let them. The fact of a woman's wishing to get up is to me a very good reason why she should get up. In the second place: few physicians will deny that nothing so relaxes the tone of muscular fibre as a close confinement in bed. In my experience a woman ordinarily feels stronger on the fifth day than she does on the ninth, if rigorously kept under quilts and blankets. Once more: the upright position not only excites the womb to contract, but, by distributing the blood and equalizing the circulation, it actually lessens the amount of the lochia and shortens their duration. On the other hand, the dorsal decubitus keeps up a passive congestion of the womb as a whole, the engorgement of the greatly hypertrophied placental site, and a blood-stasis in the now thickened posterior wall—all important factors in hindering the process of involution. Again: uterine diseases are hardly known among those nations whose women early leave their beds. From passages in the writings of the classics, it is evident that among the ancient Greeks and Romans, those models of physical strength and beauty, the women arose and even bathed in a running stream, very shortly after delivery; in some cases on the very day. Finally: what is sounder than all theory, a sufficiently long and well-sifted experience has proved to me that, by such a treatment, convalescence is rendered far more prompt and sure. At this result, very unexpected to the multiparous patients of the Retreat, they are constantly expressing their surprise.

The arguments against the customary purge on the second or the third day are to my mind very sound. I am well satisfied that the "milk fever," for which it was originally introduced into practice, is essentially a myth. Genuine "milk fever" as such is a rare complication, and, when present, of no significance whatever. Unless the nipples are chapped or abraded, the engorgement of the breasts hardly ever leads to abscesses. In proof of this assertion; how rarely does mastitis follow stillbirths! In the vast majority of cases, the occasional constitutional disturbance, the chill-and-fever on the third or fourth day—the so-called "milk-fever"—is owing to a septic cause, and not to a mammary one. True, the breasts are by this time swollen and painful, but it is a mere coincidence, and coincidence is here mistaken for causation. Purges are, therefore, not only wholly unnecessary,

but they disturb the equilibrium, and, what is worse, promote the absorption of septic matter. Partly from increasing the activity of the absorbents, the hemorrhages of labor are very liable to be followed by blood-poisoning. Now, the same result may be logically predicated of a depletion in the shape of a purge. Were my readers to go over their cases of puerperal fever or of other puerperal diseases, I think that they will find some of them dating from the day on which a purge had begun to act. Is it not more than a mere coincidence that these diseases attack a woman usually on the third or the fourth day, viz., the day of or following the administration of the customary purge? Three instances of puerperal peritonitis, two of them ending in death, have come to my knowledge, which were referable as plainly as could be to purgation. In one, the lady was slowly but surely mending from the effects of a severe instrumental delivery. For some reason or other she took, in the third week, an ordinary dose of citrate of magnesia. This violently purged her, and at once brought on a fatal attack of fever. In the other two the patients could not have been doing better, until they got a dose of castor oil, which was given for no other reason than that the authors of our text-books were haunted by the bugbear of "milk-fever." Did space permit, I should like to show that this opinion is not shared by myself alone; that cases of phlegmasia dolens have been traced to the effects of a purge, and that the use of aperients during an epidemic of puerperal fever has been strongly condemned.

Quinia is given without stint, because, apart from its well-known tonic and antiperiodic properties, it possesses others which make it, above all remedies, the one best suited for puerperal disorders. By lowering high temperature it retards the oxidation of tissue, and hinders the formation of fibrinous concretions. By shortening the excursions of uterine fibres in their alternate contractions and expansions, it lessens the diastolic engorgement of the womb, diminishes the calibre of uterine bloodvessels, and thereby tends to keep their protective coagula from becoming loose and soluble. By contracting the placental site it proportionally limits that area of absorption. By constringing the coats of the capillaries, and by its inhibitory power over the migration of colorless blood-corpuscles, it either arrests suppu-

rative inflammation or restrains its violence. Finally, it seems to exert a positive curative action on the blood in cases of putrid or purulent absorption. Clinically, I have found nothing comparable to quinia as well as a prophylactic against puerperal disorders, as a remedy for them. But it must be given early, frequently, in large doses, and pushed to a high grade of cinchonism.

Ergot is a very untrustworthy oxytocic. One never can tell beforehand whether it will behave kindly, or run a muck. It is, therefore, no favorite with me. The vectis and the forceps being under perfect control, are far better oxytocics; their aid is therefore often invoked, in order to save a woman's strength, and to avoid that laxness of uterine fibre following a long and weary labor. Ergot is, however, given as the head is about to emerge, in order to lessen the chances of a flooding or of unruly afterpains, and to aid the process of involution by condensing the uterine globe to its minimum size. For an analogous reason I feel persuaded that Credé's method of placental delivery provokes to a more complete involution. It certainly empties the womb of all clots, and squeezes it down to its smallest capacity.

The prolonged use of the binder is given up for reasons which have been published in this Journal (April, 1874, p. 8). I shall therefore not repeat them. I wish, however, here to state that even its brief use during the first few hours after labor, is not held by me as a cardinal point. I begin to have grave doubts whether it is of any value whatever in the prevention of hemorrhage. On the score of utterly abandoning it I am quite open to conviction.

So much for the reasons on which the foregoing measures are based. Let me now give the results. Up to date there have been 756 cases of delivery, with six deaths. The following are the order and the numbers of the fatal cases, as copied from the Case-Book:—

No. 22. Concealed accidental hemorrhage from the gravid womb.
" 203. Puerperal peritonitis.
" 289. Acute chorea.
" 360. Caries of petrous portion of the temporal bone.
" 398. Chronic pelvic abscess.
" 647. Septic pneumonia.

The case of puerperal peritonitis was an isolated one. The

woman had been abandoned by her husband, to whom she was devotedly attached. She fretted and brooded over this desertion in so despairing a manner as to make me apprehensive of mania. Three other patients occupied the same ward with her, but they escaped from contagion.

Cases 22, 289, and 360 were deemed by me so exceptional that their histories were reported to the Obstetrical Society of Philadelphia, and afterwards embodied in its Transactions (*Am. Journal of Obstetrics*, vol. ii. p. 286; vol. iii. p. 140; vol. iv. p. 126). Case 398 was that of an old pelvic abscess following a previous labor, viz., an abortion produced by the kick of a drunken husband. During the last week of utero-gestation this abscess began to inflame and to cause her so much suffering that very large doses of morphia were needed to control it. Labor very greatly intensified this distress. When the womb was emptied a tumor was found in left broad ligament, and all the symptoms of localized peritonitis were present. Under appropriate treatment she soon began to mend; but on the fourteenth day she was suddenly seized with violent abdominal pain and fell into a collapse, from which she never rallied. An autopsy, made by my friend the editor of this Journal, revealed an old pelvic abscess, which had burst into the cavity of the abdomen. This case, it seems to me, cannot fairly be attributed to a septic cause, but to the ante-partum recrudescence of an old lesion. Case 647 is one of doubt in my mind. There were no appreciable pelvic or abdominal lesions; and yet, in default of an autopsy, which was not permitted by her friends, I think it fairer to attribute the pneumonia to blood-poisoning rather than to a non-septic cause.

To sum up, then: out of 756 cases of labor there have been

2 deaths from septic causes.
1 death from the bursting of an old abscess.
1 death from hemorrhage.
2 deaths from non-puerperal diseases.

Apart from the above record the Case-Book exhibits no case of phlegmasia dolens, and none of pelvic abscess. One woman, however, had, I am told, a pelvic abscess at home. Through fright at an outbreak of measles in the building, she insisted on rising from her bed and on being discharged on a wet winter

night. Although a large proportion of the inmates were primiparæ, and two of them confirmed epileptics, but two cases of eclampsia took place, and these in women who had not been subjected to any prophylactic treatment. The one, while laboring under violent convulsive attacks, was brought in a hack by her friends. The other was seized the day after admission. Both recovered under repeated rectal injections of drachm doses of the hydrate of chloral, and a final delivery under ether with the forceps.

Since nothing is so fallacious as statistics, even when based on large averages, it is with much diffidence that I offer the above meagre data. They may not sustain my views; but they will, I hope, show that lying-in women can be gainfully treated in a manner less artificial than is customary, and more in accordance with the maxim *naturâ duce*.

One word more: For many reasons the statistics of a lying-in hospital can never compete with those of private practice. Of these I shall adduce but two. In the first place, the former are more trustworthy, for physicians very naturally shrink from reporting their fatal midwifery cases as such. I have known a death from post-partum hemorrhage returned as one from "anemia," and another from puerperal albuminuria as a case of "pneumonia"—edema of the lungs being present; whilst fatal cases of puerperal septicemia are constantly being certified to under the heading of some prominent symptom which tells no tale, such as "peritonitis," "pleuritis," or "pneumonia." For instance, during a period of eight weeks of this year I was asked to see eight cases of puerperal fever—four of them from one Sunday to another. Of these all but one proved fatal. During the same time I casually became cognizant of seven other fatal cases. Now, during these eight weeks I studied with much interest the weekly returns of the Board of Health, and found there reported just twelve deaths from "puerperal fever." There were, however, also reported, eleven deaths from "inflammation of the peritoneum," one death from "child-bed," and one each from "septicemia" and "pyemia." Comment on the above is unnecessary; the figures speak for themselves.

In the second place, physicians naturally shirk the worry and anxiety, the delay and trouble incident to difficult labors in their

private practice, especially when such occur in a class from which they can expect no adequate remuneration. A hospital thus becomes the Cave of Adullam for all these abandoned cases. For instance: out of the six fatal cases which I have reported from the Case-Book of the Retreat, the one of chorea and that of hemorrhage were sent to the institution by the family physician—the former on account of her being unmanageable at home; the latter because her labors were growing more and more difficult from an exostosis. The two epileptics[1] adverted to, two distressing cases of phthisis and valvular disease of the heart, and many of difficult labor in multiparæ come under the same category. There are at present in the building two women not yet delivered, who were sent there by their respective medical attendants. The one is an epileptic primipara; the other a secundipara with a vesico-vaginal fistula—the result of craniotomy in her previous delivery. It is thus that the death-rates of lying-in hospitals show to disadvantage beside those of private practice.

[1] I am not aware that epilepsy predisposes to puerperal eclampsia—at least I have not found it to do so. But many physicians look upon it as a dangerous complication in labor.